FLIR Thermal Imaging Cameras

E-Series

i-Series

T-Series

A Thermography Hero's Welcome from FLIR

Patrol officers, security personnel, and American troops use FLIR infrared technology to protect lives and resources every day. In many ways, you as a thermographer do, too. With thermal imager in hand, you have access to an amazing ability—to see problems you otherwise couldn't and fix them before they cause delays, waste energy dollars, hurt someone, or shut things down. We think that's pretty heroic stuff and certainly a respectable way to make a good living.

Enjoy learning more about the technology as you explore our showcase of FLIR products. Then get ready to grab hold of the growing number of opportunities. And count on us to help you find the exact thermal imaging solution you need to help save the day.

What You'll Discover in this Guide

- *The revealing world of infrared*
- *Why thermal imaging is getting even hotter*
- *Various applications for finding hidden problems*
- *Details on FLIR's advanced camera choices and features*
- *Resolutions & FOV comparisons to size up imaging needs*
- *FLIR mobile app and reporting software productivity tools*
- *Camera specifications to match your requirements*
- *Previews of accessories, Extech instruments, & FLIR IR windows*
- *How ITC & InfraMation help lift you to hero status*

Which Camera is Right for You?

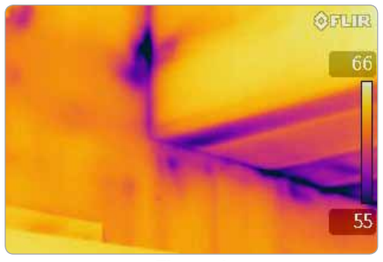
Whether you're new to infrared inspections or already a Level III thermographer, a variety of important factors will figure into your thermal camera decision: how often you use the camera, what you're inspecting, the angles you're shooting from, target size, high temperatures, distance, and other considerations. That's why we've created this guide to help you determine the right fit for your application, budget, and the way you like to work.

For example, many utilities prefer our T640 because the camera's rotating lens system makes it comfortable to aim up at overhead components while keeping the display at eye level. That's significant when doing a full day of intensive substation inspections. 640 resolution and telephoto lenses make detecting distant, small targets easier for them, too. Those same companies also carry handy i-Series cameras on their trucks so crews can do quick scans for overloaded circuits and safety checks before entering underground vaults or using a disconnect stick.

Or, consider the insulation contractor who got off to a fine start with our low cost i7 and quickly became known for finding all kinds of ways to help people save on their energy bills. As his home performance business took off, he added a second camera to keep pace, choosing an E60 for its higher IR detail and built-in digital camera so he could document side-by-side comparisons. The FLIR app connectivity to his iPad made it easier to show results to customers. And the 320 x 240 image clarity improved his web site marketing.

As you can see, different requirements mean one thermal imager may or may not fit all. So, along with this helpful guide, we encourage you to consult with your FLIR representative, who will be more than happy to help you hone your decision.

Visible



Thermal

Visit www.flir.com, or call 866.477.3687

*The thermal images shown are for illustrative purposes only, and may not have been taken by the camera series depicted.

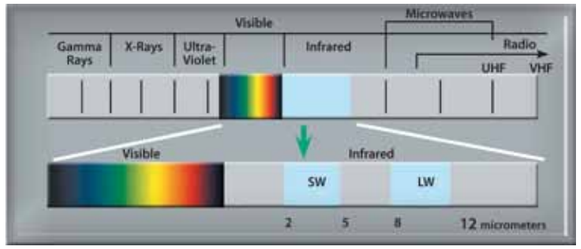
Why Thermal Imaging is Heating Up

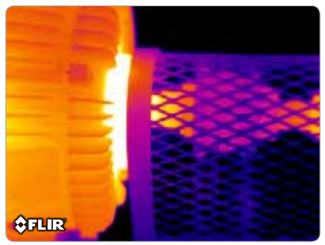
You'll be excited to know thermography services are in high demand. But first a few of the basics in case you want a quick refresher on how infrared technology works.

Making the Invisible Visible

Virtually everything in our world emits infrared radiation. While neither the naked eye nor a digital camera can see the infrared spectrum, you feel its effects all around all the time in the form of heat – from sunlight, electrical equipment, and industrial processes to cold air drafts, ice cubes, and even the nose of a dog.

Fortunately, FLIR infrared cameras can detect and capture thousands of non-contact temperature measurements in real time, transforming them into vivid thermal images that instantly show you where hot spots are.



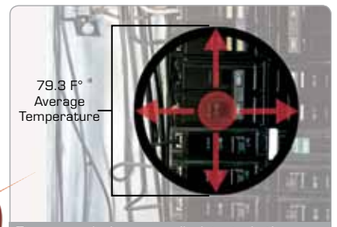


The Advantage of a FLIR Camera Over an IR Thermometer: One Sees and One is Blind

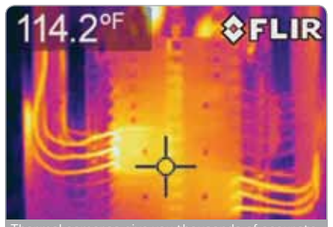
IR thermometers, a.k.a. temperature guns may be able to give you one average temperature reading at a time but they can't produce a single image. So imagine how long would it take to scan a room full of electrical panels. Accuracy is another concern. The farther away, the more general the measurement and more likely you'll miss a critical anomaly. Standing closer might yield better results but it's also more dangerous.

With a FLIR thermal camera, each snapshot provides a picture worth thousands of calibrated, radiometric temperature measurements whether taken up close or farther away. To actually be able to see heat signatures arms you with the power to locate and solve hidden problems much more quickly.

Still looking for problems one spot at a time?



Temp guns don't necessarily detect what's under the laser dot; they only show an average temperature of an area. And the farther away, the less accurate.



Thermal cameras give you thousands of accurate temperature readings in every image, so you'll get the whole picture – up close or far away.

Instead, see the whole picture instantly with thermal imaging!

Opportunities Abound

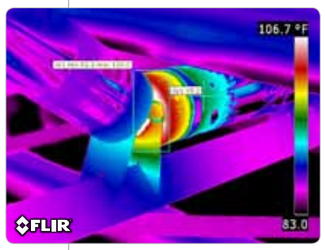
The efficiency of thermal imaging has proven its effectiveness many times over in saving homeowners and companies a bundle. In fact, cutting waste and preventing production loss pays huge ROI benefits for many organizations; in some cases, into the tens of thousands and even millions of dollars. That's why thermal cameras are fast becoming an essential tool in building performance and predictive maintenance circles. Plus, the technology just keeps getting better and is now more portable, flexible, and affordable than ever. So, if you're just venturing into thermography, this is a great time to get in on the action. And if you're already well-established, we wish you continued success.

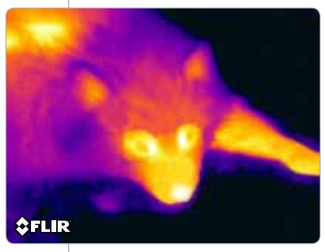
Stop and consider the importance of the following in our daily lives:

- *Energy efficiency*
- *Pest-free, mold-free homes*
- *Minimal downtime*
- *Increased safety*
- *Expedient insurance claims*
- *Infrastructure reliability*
- *Production profitability*
- *Restored livability*
- *Structural integrity*
- *The search for bigfoot*

OK, so maybe not every infrared application is serious business. But most are. After all, who wants to pay more for heating and cooling, or live with termites and rodents chewing through walls? What's the impact to commerce when power gets knocked out by a transformer failure that could have been averted? How much revenue will be lost per hour when a critical piece of manufacturing equipment suddenly goes down? What's the cost of injuries when someone is unwittingly exposed to lurking danger?

All these situations and many more can benefit greatly from taking preventative measures based on thermal imaging inspections. On the next few pages, you'll see sample images of problems caught in time.





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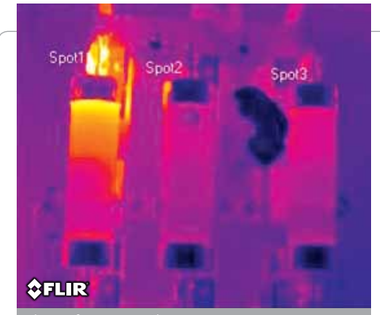
Thermal Imaging for Predictive Maintenance

The most effective tools for predictive maintenance applications, FLIR infrared cameras give you the amazing ability to see what other diagnostic instruments miss. Keep your facility operating at peak performance, avoid expensive equipment failures, and prevent loss of production capacity.

Use FLIR thermal imaging to find hidden problems before they turn into serious trouble.



Loose fuse connection.

Electrical

Find hidden problems quickly, make timely repairs, prevent unscheduled shutdowns, and improve plant safety.

Overheating chain drive.

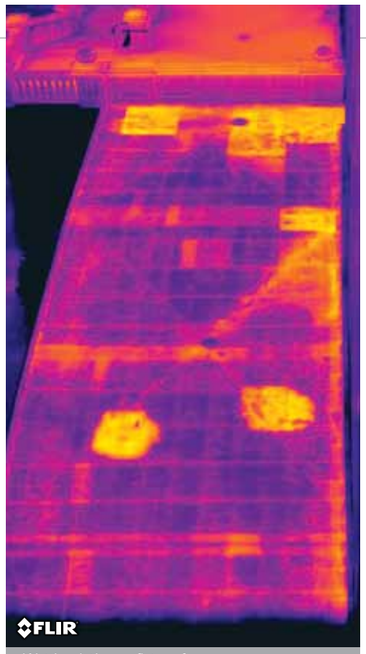
Mechanical

Discover overheated bearings, linkages, and other components before they can interrupt your operations or create safety hazards.

Overloaded high voltage circuit breaker.

Utility

Scan large areas and hundreds of connections quickly and efficiently to prevent unexpected service outages and lost revenues.



Wet insulation on flat roof.

Roofing

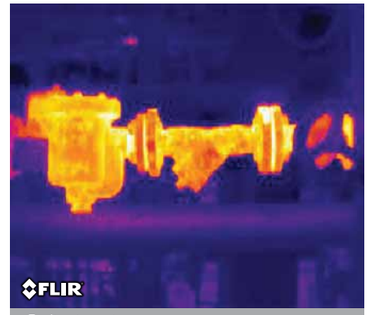
Find compromised roofing areas at your facility, and repair it before problems quickly become a safety hazard or require replacing the entire structure.

Moisture damage evident on ceiling, wall, and floor.

Building Diagnostics

Even small areas of moisture intrusion can be easy to spot with an infrared camera. Locate and repair hidden water damage before a trickle turns into a flood.

Working steam trap.



Faulty steam trap.

Energy Loss

Discover missing insulation, faulty HVAC systems, and other issues that waste energy and lots of money.

i-Series for occasional inspections and reports

Utility troublemen, HVAC pros, and facility maintenance

- *Perfect for quick scans and safety checks*
- *Far more effective than IR temp guns*
- *Rugged and affordable enough for everyone*

E-Series for more frequent inspections and reports

Plant maintenance, electricians, & facility contractors

- *Higher resolutions for extra detail*
- *IR + visible image documentation*
- *FLIR Wi-Fi app & touchscreen efficiency*

T-Series for intensive inspections and detailed reports

Substation & solar farm surveys, roofing companies, and RCM programs

- *Ergonomic and hi-res for hero shots from any angle*
- *Long-range imaging of small, high-temp targets*
- *Feature-rich performance*

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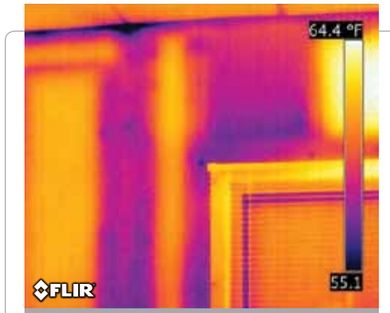
Thermal Imaging for Building Diagnostics

FLIR infrared cameras give you the power to make the invisible visible. With thermal imaging, you can see, detect, and document telltale temperature differences that show moisture damage, missing insulation, air drafts, nests in walls, and more.

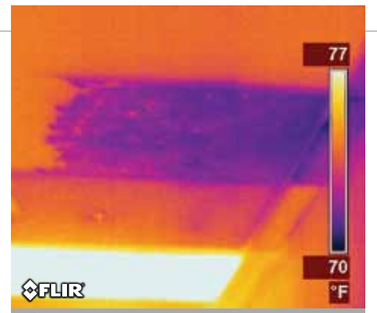
Thermal imagers from FLIR can help you find hidden building problems faster than any other technology, and produce customized reports to justify and validate the quality of repair work.



Missing insulation shows up clearly.

Missing Insulation

Locate poor insulation quickly by detecting and comparing differences with surrounding areas.



Even subtle moisture intrusion is easy to see.

Water Damage

Find and fix hidden water damage quickly before small problems become big, expensive ones, and document proof of your repairs.

Air leaks around an improperly installed window.

Air Infiltration

Detect air leaks around windows, doors, and other structures. Repairing them saves energy and money.

Overloaded circuit in breaker panel.

Electrical Problems

Finding hidden electrical problems is easy with FLIR, allowing you to take quick action to solve them.

A malfunctioning section of radiant flooring.

HVAC Problems

Discover leaking ductwork and troubleshoot heating, AC, and radiant flooring problems to maximize energy efficiency.

An undetected shower leak leads to serious problems.

Mold and Rot

See temperature differences to expose hidden leaks that can lead to expensive and extensive health issues and structural damage.

Hidden tunneling termites can destroy dwellings.

Destructive Pests

Hunt down burrowing and nesting insects and rodents before they eat customers out of house and home.

i-Series for occasional IR inspections and simple reports

Home weatherization, HVAC, and restoration contractors

- *Affordable simplicity for any application*
- *RESNET-standard i7 for energy reviews*
- *Tool box ruggedness you can trust*

E-Series for more frequent inspections and reports

Structural inspections, energy performance, and pest control

- *Higher resolutions for extra detail*
- *IR + visible image documentation*
- *FLIR apps for fast communication*

T-Series for high-demand IR services and detailed reporting

Commercial building, restoration companies, and roofing experts

- *Gets the best shots from any angle comfortably*
- *Highest image detail for clearest documentation*
- *Feature-rich high performance*

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The New FLIR i-Series

The Most Affordable Point-and-Shoot Infrared Cameras Just Got Better

More powerful than ever, i-Series improves your options with a strong line-up of fresh choices to fit the level of detail your application requires. Featuring the new i7, now with 36% higher thermal resolution than before and a wider field of view to help you image more clearly, scan more quickly, and store an entire scene in one complete picture.

Excellent 2.8" Color LCD
Shows the Whole Scene

Quick-access Menu to Easily
Change Parameters

Focus-free Lens for
Point-and-Shoot Simplicity

Ruggedness You Can Trust
Withstands 2 Meter Drop

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Three Best-in-Class Imagers:

- **i3 –** 3,600 pixels
  Ground-breaking affordability!
- **i5 –** 10,000 pixels
  Fast and accurate.
- **i7 –** 19,600 pixels
  Exceeds RESNET resolution standards.

What All i-Series Cameras Offer

- **Reliable Results –** FLIR's outstanding thermal accuracy (within 2% or +/- 2°C) and broad measurement range (-20°C to 250°C) for results you can count on.
- **Compact Design –** Light at 13 ounces (365g) for easy one-handed operation yet tough enough to stow with the rest of your tools.
- **Fully Radiometric Images –** Stores up to 5,000 JPEG image files with all temperature measurements right in the camera ready to download for further analysis and custom reports.
- **Plenty of Extras –** Comes complete with FLIR Tools reporting software, lots of onboard storage, and a hard carrying case.

Removable SD Card and USB Output for Fast
Image Downloads

Reporting Software Included

FLIR E-Series

A Revolutionary Value in Thermal Imaging Performance

Find problems faster, work even smarter, and grow your expertise with the extra performance of our popular E-Series line. Choose from eight models to customize the best match for your building diagnostics or predictive maintenance program. With an impressive list of features, you'll quickly see they're well-designed to fit beautifully into your IR inspections, budget, and the palm of your hand.

Connect to smartphones and tablets with FLIR Tools Mobile for Apple® and Android™ to import, process, and share images fast.

Large 3.5" Touchscreen Puts Thermal Details at Your Fingertips

- 2.0 or 3.1 MP Digital Camera
- LED Lamp
- Laser Pointer

Visible Light Pictures Align with Thermal Images

A New Choice in Thermal Imaging Performance

- **E30 –** *19,200 pixels*
  Built-in 2.0 MP visible light camera with lamp & laser pointer
- **E40 –** *19,200 pixels*
  Wi-Fi to mobile devices & a 3.1 MP visible light camera
- **E50 –** *43,200 pixels*
  Superior accuracy and sensitivity
- **E60 –** *76,800 pixels*
  Best point & shoot thermal resolution

Superior Thermal Imaging up to 76,800 Pixels for Longer Range Clarity

Large Backlit Buttons Fit Bare Hands or Gloves

Built Rugged to Withstand a 2 meter drop

More E-Series Features

- **Incredible Choices –** Four standard and four bx (building) models with resolutions ranging from 160 x 120 up to 320 x 240.
- **Scalable P-i-P & Thermal Fusion –** Overlay thermal and visible images for easy location orientation and clearer documentation (E40/50/60).
- **Multiple Measurements –** Add up to 3 box areas and 3 moveable spots with the touchscreen to gather detailed temperature information.
- **Perpetual Battery Operation –** 2-bay charger and spare battery option means plenty of power to keep you running all day.
- **MeterLink® –** Measure more than temperature by connecting Extech clamp & moisture meters to E-Series cameras and annotate images to further support findings.
- **Reliable Measurements –** Accuracy calibrated within 2% or +/- 2°C to meet the standard you can always trust FLIR to deliver.

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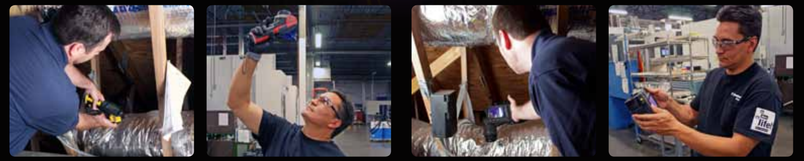
FLIR T-Series

Gets the Hero Shots Effortlessly

Look high and low for hidden problems comfortably all day with T-Series, thermal imaging's most ergonomic and flexible hand-held cameras. Featuring our rotating optical block that lets you point the lens up or down along a 120° axis while keeping the display relaxed at eye level. Scan targets from tough angles without stress. And take advantage of T-Series' other industry firsts to make it easy on yourself to get the shots that help save the day.



FLIR T420 & T440

T-Series with a New Twist

Get maximum flexibility and efficiency out of 320 x 240 thermal imaging from our new T400 line, now with more features than ever to help you meet demanding workloads.

T420 & T440 Features

- **Superior IR Images –** Sharp thermal resolution at 76,800 pixels for solid accuracy from farther away.
- **Advanced Optics –** The widest array of lens options to fit the view and spot size you need for your application.
- **New! MSX™ Enhancement –** Multi-Spectral Dynamic Imaging adds visible spectrum definition to IR images in real time for extraordinary thermal detail that instantly highlights and orients problem locations.*
- **Scalable P-i-P & Thermal Fusion –** Blend thermal with visible light images onscreen for easy identification; includes picture-in-picture window sizing.
- **Delta T & Multiple Measurement Tools –** Powerful onscreen analytics include differential temperature, 5 measurement spots, 5 box areas, isotherm and more for detailed analysis.
- **New! Sketch on IR/Visual –** Draw circles and pointers on stored images right from the touchscreen to highlight points of interest.*
- **Annotation –** Add voice or text comments to images or use the touchscreen to sketch notes and drawings; include additional measurements with Extech MeterLink® clamp and moisture meters.
- **Humidity & Insulation Alarms –** Available on bx models to quickly alert you to detected moisture intrusion and insulation issues.
- **New! Compass –** Adds camera pointing direction to every T440 bx image for additional location documentation.

*Available on T440 only

With MSX Enhancement

Sketch on IR

FLIR T620 & T640

Thermal Imaging with a Capital T

With the highest infrared resolution available in portable thermal imaging, feature-rich and user-friendly T620 and T640 cameras provide the ultimate image clarity and accuracy, making it easier to get through challenging inspections and the busiest schedules.

T620 & T640 Features

- **Highest IR Resolution in Its Class –** Crisp thermal images with 307,200 pixels (640 x 480) for the best detection, pictures, and temperature measurements from long range.
- **Advanced Optics –** A range of lens options includes our new, light 7° telephoto lens that provides astounding clarity, accuracy, and portability for imaging overhead and distant targets.
- **New! Continuous Auto Focus –** Keeps your image sharp automatically no matter where you aim for the highest clarity, accuracy, and efficiency.*
- **New! MSX™ Image Enhancement –** MSX adds visible spectrum definition to IR images in real time for extraordinary thermal detail that instantly highlights and orients problem locations.*
- **Thermal Fusion & P-i-P –** Blend thermal and visible light images onscreen to identify targets and locations easily; use fusion "threshold" to isolate hotspots in a scene.
- **More Measurement Tools –** Report all the details with 10 measurement spots, 5 box areas, Delta T temperature differential, isotherm, and auto hot/cold markers.
- **New! Sketch on IR/Visual –** Draw circles and pointers on stored images using the touchscreen to highlight points of interest.*
- **New! GPS –** Built-in GPS automatically adds location data to images for including in reports.

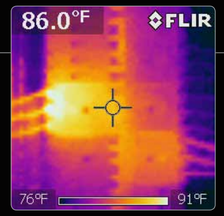
*Available on T640 only

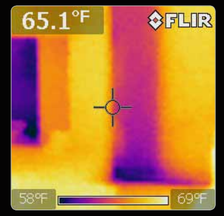
With MSX Enhancement

Sketch on IR

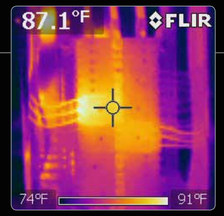
Which FLIR Thermal Camera Resolution is Right for You?

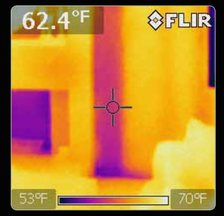
Maybe you're simply looking to replace your old-school IR thermometer with a serious thermal imaging tool. Perhaps you need a camera that meets RESNET resolution standards and gives you a wider field of view to scan larger areas. Or higher resolutions for greater image detail and temperature accuracy that helps tell the story even better. Whatever your infrared inspection program or business calls for, FLIR offers the best choice of resolutions, features, and innovations to create the right mix and the right fit.



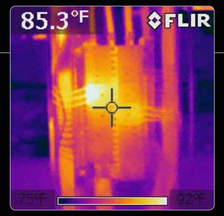


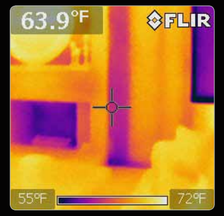
i3
60 x 60 (3,600 Pixels)
12.5° x 12.5° FOV



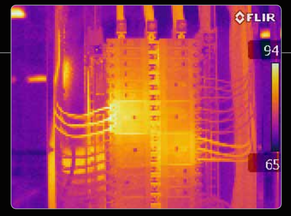


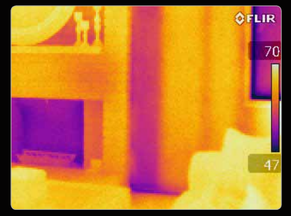
i5
100 x 100 (10,000 Pixels)
21° x 21° FOV



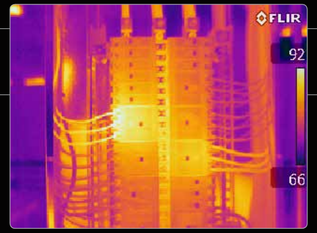


i7
140 x 140 (19,600 Pixels)
29° x 29° FOV

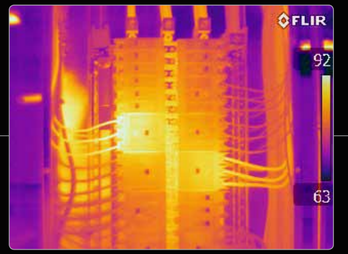




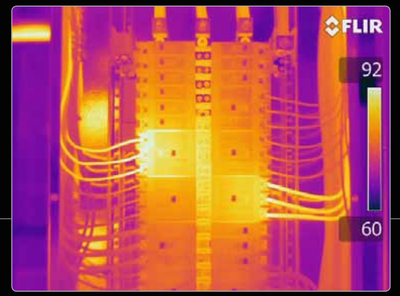
E30 & E40
160 x 120 (19,200 Pixels)
25° x 19° FOV (Standard)*



E50
240 x 180 (43,200 Pixels)
25° x 19° FOV (Standard)*



E60, T420 & T440
320 x 240 (76,800 Pixels)
25° x 19° FOV (Standard)*



T620 & T640
640 x 480 (307,200 Pixels)
25° x 19° FOV (Standard)*

***Optional lenses available. See specifications for details.**

Visit www.flir.com, or call 866.477.3687
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FLIR Tools Mobile

Import, Process, and Share Images Quickly with the Free App that Speeds Decisions

Get the word out straight from the field with FLIR Tools Mobile for Apple® and Android™. Connect your smartphone or tablet to E-Series and T-Series, then use the app to transfer images from the camera, tack on more measurement spots, refine span and level, change palettes, add notes, and generate a PDF. Email images and findings to colleagues and customers in no time. Upload to Dropbox and Box.net accounts. Or use the app to show images right on site to those who need to know immediately.

FLIR Tools Mobile also lets you stream live video from most E and all T-Series cameras, plus take remote control of T-Series functions, including focus, level, span and many other modes – great when you need to place the camera off on its own for monitoring or safety reasons, or need to share live imaging with others nearby.

With FLIR app mobility, your IR inspections will make a bigger impact, get problems solved sooner, and help put you on the fast track to greater productivity.

Key Features:

- *Wirelessly import images from the camera's SD card.*
- *Stream live video from T-Series and select E-Series cameras.*
- *Remotely control and record images & MPEG movies from T-Series cameras.*
- *Analyze and tune radiometric images and measure temperatures.*
- *Create PDF reports with text and custom logos.*
- *Share images and reports using e-mail, Box, and Dropbox.*
- *NEW! Edit MSX Fusion images.*
- *NEW! Edit Sketch images.*

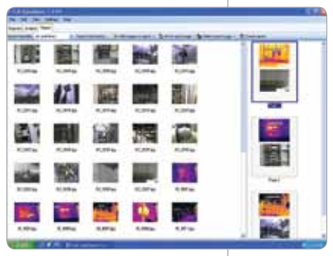
Reporter Pro

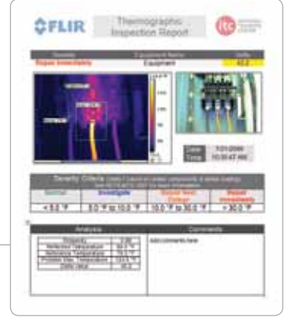
Extra Reporting Power for Busy Professional Thermographers

FLIR Reporter PRO equips you with everything you need to customize a distinctive optional look and generate reports as quickly as possible that stand out with greater credibility. Design your templates in Microsoft Word®, drag-and-drop images, and generate multi-page reports automatically. Import all of your measurements, Delta T analysis, or personal formulas – even load your imagery and report data into Excel and PowerPoint!

Key Features:

- *Flexible report design and layout*
- *Fully integrated with Microsoft Word*
- *Powerful analysis tools include Delta T & auto hot spot*
- *Powerful temperature analysis*
- *Wizard-guided report generation*
- *TripleFusion Picture-in-Picture (movable, sizable, scalable)*
- *Predictive trend analysis functionality*
- *Automatically link to Google Maps™ for images with GPS coordinates*





FLIR Tools for PC

Free Reporting Software That Helps You Look Good

No matter what FLIR thermal imager you decide on, we want you to be able to share important images with others efficiently and professionally. To make sure, all our latest hand-helds come with FLIR Tools. Easy to load onto your PC, FLIR Tools is a versatile software program that allows you to quickly import and analyze images, create inspection reports, remote control select cameras over USB, and update camera firmware.

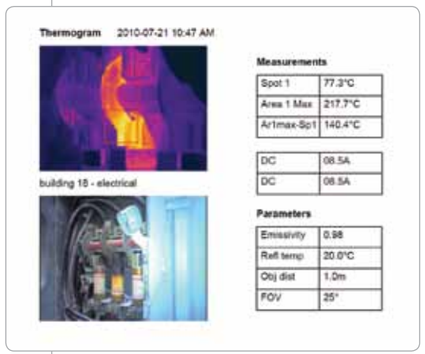
Key Features:

- *Import images from the camera to the PC.*
- *Search for images using file name, text description, and other image properties.*
- *Analyze and tune radiometric images and measure temperatures.*
- *Create PDF reports from a variety of pre-defined template formats.*
- *Customize the report layout, header, footer, and company logo.*
- *Clickable GPS link in the PDF report (for cameras with embedded GPS tags).*
- *Remotely control USB Video, Ethernet, and Firewire cameras.*
- *NEW! Create Text Comment Files and transfer them to the camera.*
- *NEW! Edit MSX Fusion images.*
- *NEW! Edit Sketch images.*

InstantReport

Straight-forward, Onboard Convenience

Create professional, single-page reports right from your E60 or T-Series camera with InstantReport. FLIR's analysis software has always offered polished results and been easy-to-use. Now, you can generate simple reports without a PC. Incorporate thermal and visual images along with t your measurements and analysis tools, and text & sketch annotations in a standard PDF that's easy to share right from the touchscreen.



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Imaging Specifications

Specifications	Point & Shoot			Performance				High-Performance			
Model	**i3**	**i5**	**i7**	**E30/E30bx**	**E40/E40bx**	**E50/E50bx**	**E60/E60bx**	**T420/T420bx**	**T440/T440bx**	**T620/T620bx**	**T640/640bx**
Accuracy	±2% or 2°C			±2% or 2°C				±2% or 2°C			
IR Pixel Resolution	3,600 (60 x 60)	10,000 (100 x 100)	19,600 (140 x 140)	19,200 (160 x 120)		43,200 (240 x 180)	76,800 (320 x 240)	76,800 (320 x 240)		307,200 (640 x 480)	
Thermal Sensitivity	<0.15°C	<0.10°C		<0.10°C	<0.07°C/<0.045°C	<0.05°C/<0.045°C		<0.045°C		<0.04°C	<0.035°C
Temperature Range	–4 to 482°F (–20 to 250°C)			-4°F to 662°F (-20°C to 350°C) bx: -4°F to 248°F (-20°C to 120°C)	-4°F to 1,202°F (-20°C to 650°C) bx: -4°F to 248°F (-20°C to 120°C)			-4°F to 1,202°F (-20°C to 650°C) Optional to 2,192°F (1,200°C) bx: -4°F to 662°F (-20°C to 350°C)	-4°F to 2,192°F (-20°C to 1,200°C) bx: -4°F to 1202°F (-20°C to 650°C)	-40°F to 1,202°F (-40°C to 650°C) Optional: to 3,632°F (2,000°C) bx: -40°F to 662°F (-40°C to 350°C)	-40°F to 3,632°F (-40°C to 2,000°C) bx: -40°F to 1,202°F (-40°C to 650°C)
Display Size/Format	2.8"/Portrait (Tall)			3.5"/Landscape (Widescreen)				3.5"/Landscape (Widescreen)		4.3"/Landscape (Widescreen)	
Viewfinder	—	—	—	—	—	—	—	—	—	—	•
Measurement Modes	1 mode: Spot (center) mode		3 modes: 1 Spot (center); 1 Area Box (Min/Max) and Isotherm (above/below)	4 modes: 1 Spot (center); 1 Area Box (Min/Max); Isotherm (above/below); Auto hot/cold spot	5 modes: 3 Spots; 3 Area Boxes (Min/Max); Isotherm (above/below); Auto hot/cold spot; Delta T			5 modes: 5 Spotmeters, 5 Area Boxes, Isotherm, Auto hot/cold spot, Delta T		5 modes:10 Spots, 5 Area Boxes/Circles, Isotherm, Auto hot/cold spot, Delta T	
Spot mode	1 center/fixed			1 moveable	3 moveable			5 moveable		10 moveable	
Frame Rate	9 Hz			60 Hz				60 Hz		30 Hz	
Field of View	12.5° x 12.5°	21° x 21°	29° x 29°	25° x 19°				25° x 19°			
FOV Same as IR Lens	—	—	—	—	—	—	—	•	•	•	•
Optional Lenses	—	—	—	2: 15° Tele, 45° Wide				7: 6°, 15° Tele, 45° Wide, 90°; Close up: 100, 50 µm		6: 7° & 15° Tele, 45° Wide; Close-up: 80, 100, 50µm	
Focus	Focus free			Manual				Manual & Automatic			
Continuous Auto Focus	—	—	—	—	—	—	—	—	—	—	•
Min. Focus Distance	0.6 m (2 ft.)			0.4 m (1.31 ft.)				0.4 m (1.31 ft)		0.25 m (9.8 in.)	
Radiometric JPEG to SD Card	•	•	•	•	•	•	•	•	•	•	•
MPEG4 to SD (non-radiometric IR)	—	—	—	—	•	•	•	•	•	•	•
Thermal palettes	3: Iron, Rainbow, and Gray			12: Arctic, Gray, Iron, Lava, Rainbow, and Rainbow High Contrast (plus all inverted)				12: Arctic, Gray, Iron, Lava, Rainbow, and Rainbow High Contrast (plus all inverted)			
FLIR Tools for PC	•	•	•	•	•	•	•	•	•	•	•
Instant Report	—	—	—	—	—	—	•	•	•	•	•
Battery Operating Time	>5 hrs			>4hrs				>4hrs		>2.5 hrs	>2.5 hrs
Built-in Digital Camera	—	—	—	2.0 MP	3.1 MP			3.1 MP		5MP	
Built-in Illuminator LED	—	—	—	•	•	•	•	•	•	•	•
Touchscreen	—	—	—	•	•	•	•	•	•	•	•
Digital Zoom	—	—	—	1x	2x	4x		4x	8x	4x	8x
Insulation Alarm	—	—	—	bx	bx	bx	bx	bx	bx	bx	bx
Dewpoint Alarm	—	—	—	bx	bx	bx	bx	bx	bx	bx	bx
MeterLink® connectivity	—	—	—	—	•	•	•	•	•	•	•
Laser Pointer	—	—	—	•	•	•	•	•	•	•	•
Laser Locator (on IR image)	—	—	—	—	•	•	•	•	•	•	•
Compass	—	—	—	—	—	—	—	—	bx	—	bx
GPS	—	—	—	—	—	—	—	—	—	•	•
IR Window Correction	—	—	—	•	•	•	•	•	•	•	•
Delta T	—	—	—	—	•	•	•	•	•	•	•
Picture in Picture	—	—	—	—	Fixed PIP	Scalable PIP		Scalable PIP		Scalable & Moveable	
Thermal/Visible Fusion	—	—	—	—	—	•	•	•	•	•	•
MSX Thermal Image Enhancement	—	—	—	—	—	—	—	—	•	—	•
Onscreen Sketching	—	—	—	—	—	—	—	—	•	•	•
Sketch on IR/Visual Image	—	—	—	—	—	—	—	—	•	—	•
Voice/Text Annotation	—	—	—	•	•	•	•	•	•	•	•
FLIR Tools Mobile app for Apple® & Android™	—	—	—	—	•	•	•	•	•	•	•
FLIR App Streaming Video	—	—	—	—	•	•	•	•	•	•	•
FLIR App Remote Control	—	—	—	—	—	—	—	•	•	•	•
Drop (2 meter/6.6 feet)	•	•	•	•	•	•	•				
Weight (including battery)	12.8 oz (365 g)			1.82 lbs (0.825 kg)				1.94 lbs (0.88 kg)		2.87 lbs (1.3 kg)	

Visit www.flir.com, or call 866.477.3687

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MeterLink®

Measure More than Temperature with Your Camera

FLIR thermal imagers help you find electrical problems, moisture damage, and energy loss quickly and easily by detecting and measuring temperature differences. But in many cases you'll need to quantify the severity of those problems with electrical load data or moisture content readings. MeterLink puts it all together.

MeterLink-enabled Extech clamp and moisture meters transmit essential diagnostic data wirelessly to compatible FLIR cameras and automatically annotate the thermal image with the extra information that customers, colleagues, and insurance companies require.

MeterLink helps thermographers:

- *Quantify electrical problems in reports*
- *Add detail to load imbalance diagnostics*
- *Document energy-consumption data*
- *Improve documentation of moisture detection*

MeterLink is a patented technology only available with compatible FLIR cameras.

Accessories:

No other infrared camera manufacturer offers a wider selection of ways to accessorize your thermal imager than FLIR. Choose from a range of lenses, carrying pouches, Bluetooth headsets, cables, chargers, and more.

i-Series:

Accessories include extra battery, belt pouch, power supply with multi-plugs, micro-SD with adaptors, USB standard A to mini-B cable

E-Series:

Accessories include 15° and 45° lenses, sunshield, tripod adaptor, car charger kit, Bluetooth headset, video cable, extra batteries, and more.

T-Series:

Accessories include: 7°, 15°, 45°, close-up lenses, pouches, sunshield, tripod adaptor, car charger, Bluetooth headset, HDMI to DVI cable, video cable, neck strap, and more.

Contact your nearest FLIR dealer or representative for more information and to order accessories. Or visit www.FLIR.com

i-Series

E-Series

T-Series

FLIR IRW-Series

IR Inspection Windows with PIRma-Lock™

FLIR's new IR Windows put added safety between you and energized equipment, eliminate the need for opening live electrical cabinets during IR inspections, and help protect you from the danger of a potential arc flash. Much easier to mount and use than other brands, FLIR IR Windows allow you to perform scans more efficiently to comply with NFPA 70E requirements.

Easy Installation – Only one hole to drill and FLIR's single PIRma-Lock™ ring nut to tighten; same design as conduit connections that use standard US punch tools
Quick Access Hinged Cover – Simple flip-open cover with integrated equipment ID label stays permanently attached so it never gets dropped, mismatched, or lost
Broadband Transmission – Calcium fluoride lens supports short-, mid-, and longwave IR cameras, visual inspections, and fusion technology; allows FLIR cameras with integrated lamps to capture video documentation

One hole to cut.

Easy placement.

Single PIRma-Lock™ ring nut.

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Extech: Tools You Need for Test, Measurement & Inspection

Extech is a pioneer in handheld test equipment. Innovative capabilities and multifunction versatility set Extech apart. Extech arms you with rugged, reliable and accurate tools you can trust on every job.

Electrical Contractors: Get Wired for Innovation

Extech electrical meters & testers offer you advanced capabilities to get the job done. Rely on Extech for fast, precise diagnostics.

For Electrical Testing in the Toughest Conditions

Along with True RMS accuracy, the EX500 series' Category IV rating protects against transient overvoltage and arcing flash over. This rugged, waterproof, drop proof multimeter takes whatever you dish out. Get industrial-duty protection with Extech.

- *Online Video*
- *Built-in IR*
- *Wireless*
- *CAT III/CAT IV*

True RMS Industrial MultiMeter

Keep Current with Safety and Versatility

EX800-series clamp meters work as hard as you. Designed for safety and ruggedness, EX800 clamps feature CAT III, IV, 1000A AC/ DC capabilities, and an IR thermometer. Plus, MeterLink® connects your clamp to a FLIR infrared camera.

- *Online Video*
- *Built-in IR*
- *METERLiNK*
- *CAT III/CAT IV*

EX830 True RMS AC/DC Clamp Meter

When Power Quality Becomes Unreliable

Power factor correction and harmonics are perennial power quality issues. Highly customizable PQ3350 analyzers troubleshoot "dirty power" with a range of modular options to ensure the right tool for today's job—and tomorrow's.

PQ3350 3-Phase Power & Harmonics Analyzer

HVACR/Mechanical Contractors: Stay Cool Under Pressure

HVACR/mechanical systems are among the most complex in any facility. Go to Extech for accurate, reliable tools for airflow, temperature, humidity, IAQ, and more.

Track Airflow Trouble

From solving HVAC problems to ensuring workplace safety compliance, the SDL350 hot-wire thermoanemometer combines accurate diagnostics for airflow and temperature, sophisticated datalogging, and easy access through the smallest openings.

- *Datalogger*
- *Hot Wire & Vane Propeller Models*
- *SD Storage*

SDL350 Hot Wire CFM Thermo_Anemometer

Boldly Go Where No Tech Has Gone Before

The BR250 wireless video inspection camera accesses hard-to-reach areas while recording video and photos. Imagine detaching the wireless display and holding it in your hand while you position the scope for just the right angle.

- *Online Video*
- *Wireless*
- *JPG*
- *AVI Video*

BR250 Video Boroscope

Less is More: Multi-Function Tools Designed for the HVACR Pro

Throw out your clamp meter, DMM, voltage pen, differential thermometer, and IR thermometer. Now one tool does it all without the clutter. The Extech EX623: get more done with a 5-in-1.

EX623 True RMS AC/DC Clamp Meter

HVACR Pros Trust Extech

Extech arms HVACR/mechanical contractors with a range of meters and testers for every part of the job:

- *Airflow meters (anemometers)*
- *IAQ Monitors*
- *Humidity Meters*
- *Temperature Meters (Contact & Non-Contact)*
- *CO & CO2 Meters*
- *Combustible Gas Leak Detectors*
- *Pressure Meters (Manometers)*
- *Digital Chart Recorders & Dataloggers*
- *Dry Bulb/Wet Bulb Meters*

Visit www.flir.com, or call 866.477.3687

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Plant Predictive Maintenance: Maximize Uptime

Plant Maintenance, Repair and Operations (MRO) programs are critical for cost control, up time, and employee safety. Extech Plant MRO tools put the "predict" in predictive maintenance.

Finding Bad Vibes in Your Plant

Vibration can indicate deteriorated lubrication, unbalanced components and other serious, pre-failure conditions. With up to 4 channels of datalogging, meters like the SDL800 and VB500 record vibration trends to quickly isolate problems.

- *1-Way, 4-Way*
- *Datalogging*
- *SD Card*

SDL800 Vibration Meter

Fix Phase Rotation

If you work in a plant where three phase power feeds drives, electrical systems and essential components like motors, ensure proper phase sequence after repairs, upgrades or replacements with easy-to-use phase rotation testers.

- *CAT III*
- *Contact/Non-contact*
- *Kit Available*

PRT200 Non-Contact Phase Rotation Tester

Identify Insulation Issues

Harsh environments with temperature extremes or chemical contamination accelerate insulation deterioration. Don't put worker safety and power quality at risk. Detect deteriorated insulation early with Extech insulation testers.

5kV Insulation Tester 380395

Water/Disaster Restoration: Leave 'Em High & Dry:

Restoration and remediation work relies on moisture, humidity, and temperature measurements. Trust Extech to track progress, reverse property damage and minimize mold hazards.

Spheres of Influence

Extech's innovative new MO257 ball sensor moisture meter uses high frequency sensing technology for accurate, noninvasive and non-destructive readings from 0.78" to an impressive 1.6". Bypass tilework and other surface finishes with Extech.

- *Non-invasive*
- *1.6" Depth*

Go Beyond the Moisture Meter

The InspectorPro MO297 is so much more than a 2-way moisture meter. Use it for air & surface temperatures, humidity, and even condensation hazard. Plus, it shares readings with your FLIR using MeterLink®.

- *METERLiNK*
- *IR*
- *Pin/Pinless*

Track Your Restoration from Start to Finish

In restoration, documentation is essential for insurance billing and customer satisfaction. Datalog humidity, temperature, dew point and wet bulb with the versatile SDL500 hygro-thermometer

- *Datalogging*
- *Temperature*
- *Humidity*
- *SD Card*
- *Type K/J Inputs*

Pinless Moisture Meter

MO297 Moisture Meter

SDL500 Hygro-Thermometer

Waterproof, Drop-proof, HD Wireless Videoscopes

Extech's HDV600 videoscopes combine ruggedness and highdefinition without compromises. From a jumbo 5.7" display to glove-friendly handsets, wireless connectivity, audio annotations, and 320° articulated probes, Extech's award-winning videoscope line belongs on your short list.

Chart Your Progress

Humidity/temperature chart recorders constantly require pen and paper supplies. Go paperless without compromises. The RH520 digital chart recorder is popular in HVACR, Manufacturing, Warehousing/ Storage, Disaster Restoration, IAQ Audits and many other applications.

Visit www.flir.com, or call 866.477.3687

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The Infrared Training Center

Thermal Imaging Heroes Needed: Be Ready to Answer the Call

Today's cameras are simple to turn on, point at a target, and start capturing images or video clips. Determining whether you're seeing a problem, analyzing your images, navigating your free software, and developing an accurate, actionable report is what's going to make you a thermography hero. That's going to require some training. The Infrared Training Center (ITC)—FLIR Systems' education arm—wants to see you succeed.

The greater your knowledge about thermal imaging, the greater the dividends you'll realize for your company and your career. The ITC offers classes for practically every application, from free online courses to advanced training that can certify you as a thermography expert, qualifying you to take a leadership role in your internal IR program.

ITC classes include:

- *Building Inspection*
- *Condition Monitoring*
- *Roofing Applications*
- *Custom R&D Applications*
- *Optical Gas Imaging*

FREE Online Courses

These user-friendly, on-demand courses are designed to show you how to use your camera and get started on electrical surveys, energy audits and more.

Thermography Certification Training

Level I certifies that you know how a thermal imager works and how to use it. Level II cranks your credibility up a notch with more in-depth concepts and intensive labs. Level III asserts that you have knowledge and skills to administer your company's thermography program. These certifications offer strong validation to support the work you do as a thermographer.

Other classes include:

- *IR Electrical Inspection/IR Roofing Inspection*
- *Optical Gas Imaging Safety and Leak Detection*
- *Level I Certified Building Investigations*
- *Consulting, R & D and Program Development*

Come to classes at our training center or at one of our many regional classes. Mobile Training Units and on-site training at your facility are encouraged if you would like to certify a group of 10 or more.

For a complete list and schedule of courses and more information, visit www.infraredtraining.com or call 1.866.872.4647.

Scan for Full ITC Schedule

InfraMation

Join us for the world's largest infrared applications conference.

FLIR's thermal imaging cameras are opening up a new world of opportunities, providing thermographers with innovative ways to solve technical challenges that were simply invisible in the past. The technology is exciting, with new ideas and applications popping up every day, making it essential to keep up.

A fun and informative career-building event, InfraMation is ideal for anyone who wants to learn more about thermal imaging. Hear from the experts as they cover such topics as plant and facility predictive maintenance, building diagnostics, software efficiencies, marketing tips, and case studies.

Stay current and maintain certification – Earn credits towards your Level I, II, or III re-certification as you keep up-to-date with the latest thermography analysis techniques, and learn new and innovative ways to put the technology to great use.
Sharpen your infrared camera skills – InfraMation dedicates several days to proper camera operation and image interpretation through interactive clinics, panel discussions, and poster sessions that give you practical, real-world instruction.
Pick the track that's right for you – Presentations and clinics include topics on Home & Energy Audit Thermal Inspections, IR Windows and Arc Flash Safety, Infrared Business Marketing, Indoor Electrical, Advanced Substation and Transformer Inspections, and sessions on thermal camera reporting software, among many others.
Network while you learn – Rub elbows with presenters, colleagues, and keynote speakers during breaks and special social events. What better way to make new friends and absorb more inframation than sharing experiences with thermography heroes like yourself.

Get more InfraMation on this year's upcoming conference at www.inframation.org or call 1.877.773.3547.

Visit www.flir.com, or call 866.477.3687
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Try them first!

Not sure which FLIR is right for you? Rent or lease the model you think fits your needs first and take it for a test drive!

Rent

FLIR's rental program is a great way to make sure you are getting the model, performance, and features you need. Our rental department has all the current models in stock, and we are ready to help.

Lease

Leasing is a great way to minimize your initial expense, and there may be tax advantages for you to lease. FLIR has several options for those interested in starting or upgrading your program. Give us a call and we can help.

Trade Up

FLIR offers trade-in value for many existing cameras. Contact your FLIR representative our trade-in program, and check into our stock of Pre-Owned cameras while you're at it.

About FLIR

All infrared cameras are not created equal, because infrared camera manufacturers are not all the same. FLIR stands above the rest.

The largest commercial infrared company in the world, FLIR has nearly 50 years of experience building and integrating high-performance infrared cameras, giving us a command of these specialized technologies that no one else can touch.

FLIR's products are at work every day saving lives, protecting our troops overseas, and helping to keep borders and facilities safe.

Now, FLIR's cameras are available for your personal use, too. You can have a FLIR on your boat, your car, or even as a home security camera. The same FLIR technology in your maintenance camera is in Audi and BMW cars as a pedestrian detection system. And if you enjoy hunting and outdoor actives, there's an inexpensive FLIR for you too. You might not know FLIR by name, but you have been seeing our products at work since the 1960's.

If you are looking for infrared camera products, you've come to the right place.

12 things to consider before you invest in an infrared camera:

1 *Most infrared cameras have fewer pixels than visible-light cameras, so pay close attention to detector resolution. Higher resolution models can measure smaller targets from farther away.*

2 *If you need to report findings to others, be sure to buy a system with a built-in visible-light camera outfitted with a lamp and a laser pointer to help document problems in darker areas.*

3 *Not all infrared cameras offer the same measurement accuracy. Select the camera that delivers the most precise, repeatable results.*

4 *Many infrared cameras store images in a proprietary format, making it a hassle for others to view them. Choose one that supports radiometric JPEG and MPEG 4 video for easier image sharing.*

5 *Infrared cameras that link wirelessly to clamp and moisture meters can measure more than just temperature. Choose one that works with MeterLink-enabled gear to quantify the severity of problems.*

6 *New Wi-Fi apps for mobile devices help streamline the communication of infrared images and data. Select a camera compatible with this leading technology.*

7 *Consider the camera's design ergonomics and the types of inspections you will likely perform, as some cameras are much easier to use when imaging in hard-to-reach areas.*

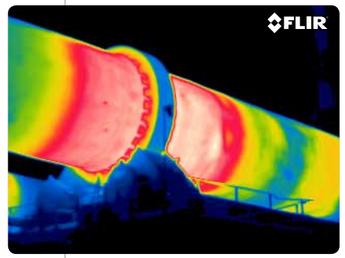
8 *An image fusion feature blends the thermal and visible-light images, providing reports that are easy to understand.*

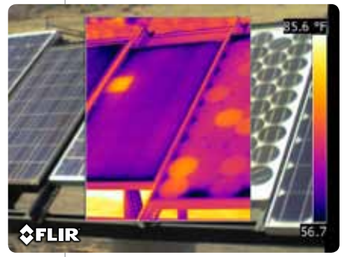
9 *Not all reporting software products are created equal. Be sure to try out the product first to find the one that's right for you.*

10 *Choose a camera with a wide temperature range so you measure ambient and high-temp spots in the same image.*

11 *Look for cameras with a reliable, extended warranty program that covers parts and labor, batteries, and the detector for at least two years so you're protected for the long haul.*

12 *Make sure your investment in an infrared camera is backed by a strong manufacturer who will provide ongoing technical support and training.*





FLIR 2-5-10 Warranty

All i-Series, E-Series, and T-Series cameras are covered by our revolutionary 2-5-10 Warranty when registered with FLIR within 60 days of purchase (see details at FLIR.com).

2 Years on Parts & Labor for the Camera
5 Years of Coverage on Batteries
10 Years of Protection on the IR Detector

Only FLIR can give you peace of mind with a warranty program like this, because only FLIR makes all of the camera's critical components from the ground up.

5-10-2 Protection

Visit www.flir.com, or call 866.477.3687

*The thermal images shown are for illustrative purposes only, and may not have been taken by the camera series depicted.

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